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**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

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1CD

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/921,533 09/02/97 TORMALA

P 2880/27

HM12/0903

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EXAMINER

CHANNAVAJJALA, L

ART UNIT

PAPER NUMBER

1615

DATE MAILED:

09/03/99

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.  
**08/921,533**

Applicant(s)

**Tormala et al**

Examiner  
**Lakshmi Channavajjala**

Group Art Unit  
**1615**



☒ Responsive to communication(s) filed on Jun 10, 1999

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-22 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-22 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 5

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 1615

### **DETAILED ACTION**

Receipt of Information Disclosure Statement dated 6-4-99, request for extension of time and amendment A, both dated 6-10-99 is acknowledged.

Claims 1-22 are pending.

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1 and 2 have been considered but are moot in view of the new ground(s) of rejection. Rejection of the above claims made in the previous office action has been canceled.

2. Claims 1 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims recite "polymeric component being distinguishable from the composite material as a whole". It is the understanding of the examiner that the claims require a polymeric matrix having two reinforcing elements, one being a polymer and the other a bioceramic glass. However, it is unclear to the examiner that as to the how one of the elements in the above matrix can be distinguishable from the other, when both the elements together form a matrix. A clarification is requested.

### ***Claim Rejections - 35 U.S.C. § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1615

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6 and 11-20 are rejected under 35 U.S.C. 102(b) as being anticipated by US patent No. 5084051 to Tormala et al (hereafter '051).

'051 teaches surgical biocomposite material suitable for bone surgical applications comprising a polymeric reinforcing element and bioceramic element, wherein the polymeric reinforcing element could be a mixture of polymers or polymer and porous or non porous bioceramic material (abstract, lines bridging cols. 1 and 2; col. 3, lines 14-53; col. 4, lines 19-68, col 5-6, col. 8, lines 61-68, col. 9-10). The reinforcing polymer is in the form of reinforcing fibers resulting composite has good mechanical strength and integrity and is easy to handle. '051 teaches the various methods of manufacturing the composite as claimed in the instant invention and the addition of additives which facilitate bone growth and /or antibiotics in the composite material.

***Claim Rejections - 35 U.S.C. § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1615

6. Claims 1-8 and 11-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 5,084,051 to Tormala et al (hereafter '051).

'051 discussed above, reinforcing polymer components. Although the patent teaches layered reinforcing elements, the instant claims as such does not reflect that the reinforcing elements are not layered. Thus, the instant claims are within the scope of '051. Further, it is the position of the examiner that optimizing the thickness of the fibers of reinforcing polymer as well as the size of the bioceramic particles is well within the scope of ordinary skill in the art, such that the composite allows for the in growth of the bone and fibers impart good mechanical strength to the composite.

7. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 5,084,051 to Tormala et al (hereafter '051) as applied to claims 1-8 and 11-22 above, and further in view of Bonfield et al.

Tormala discussed above does not teach the volume fraction of bioceramic as claimed in the instant invention. Bonfield et al teaches bone composites containing hydroxyapatite and polyethylene composites of 0.3 to 0.5 volume fraction, which imparts fracture toughness to the composite. Accordingly, it would have been obvious for one of a skilled artisan to machine the bone composites having a volume fraction which increases the toughness and strength of the composite and have comparable mechanical properties with that of the bone.

Art Unit: 1615

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

No claims are allowed.

### *Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lakshmi S. Channavajjala whose telephone number is (703) 308-2438. The examiner can normally be reached Monday through Friday from 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page, can be reached on (703) 308-2927. The fax number for this Group is (703) 305-3592.

Art Unit: 1615

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. § 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [thurman.page@uspto.gov].

**All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of confidentiality requirements of U.S.C. § 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.**

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703-308-1235).



Lakshmi S. Channavajjala

08/31/99

  
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